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A review of the genus *Zhengitettix* Liang (Orthoptera: Tetrigoidea) with description of one new species

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Abstract: The genus *Zhengitettix* from China was reviewed, with six species recorded, including one new species, *Zhengitettix triangularis* sp. nov., which was collected from Yunnan, S. W. China. The new species is allied to *Z. hainanensis* Liang, 1994, but differs in: width of frontal ridge sulcus as wide as the width of basal segment of antenna; antennae inserted between the lower margin of eyes; hind process reaching one third of top part of hind tibia; hind wing reaching extending over the top of hind process; hind tibia black. A key to species of the genus is given.

Key words: Orthoptera; Tetrigoidea; *Zhengitettix*; new species

The genus *Zhengitettix* was erected by Liang Ge-Qiu in 1994 (Liang, 1994), with the only type species *Zhengitettix hainanensis* Liang, 1994, which is distributed in Hainan. Zheng and Jiang (2002) described another species *Zhengitettix transpicula* Zheng *et* Jiang, 2002 from Yunnan. Later they (2005) described *Zhengitettix obliquspicula* Zheng *et* Jiang, 2005 from Guangxi; Liang, Jiang and Liu (2007) described *Zhengitettix curvispinus* Liang *et al.*, 2007 from Guangxi; Deng, Zheng and Wei (2010) described *Zhengitettix nigrofemurus* Deng *et al.*, 2010 from Guizhou. One new species was found when the specimens of Tetrigoidea collected from Yunnan and other regions in recent years were sorted and identified. Type specimens are deposited in the Institute of Zoology, Shaanxi Normal University, Xi'an, China and Key Laboratory of Forest Disaster Warring and Control in Yunnan Province, Southwest Forestry University, respectively.

Zhengitettix Liang, 1994

Zhengitettix Liang, 1994, *Entomological Research*, 1:33; Liang and Zheng, 1998, Fauna Sinica, Insecta. Vol. 12, Orthoptera, Tetrigoidea, 75; Zheng, 2005, Fauna of Tetrigoidea from Western China, 49 - 50; Deng, Zheng and Wei, 2007, Fauna of Tetrigoidea from Yunnan and Guangxi, 43.

Type species: *Zhengitettix hainanensis* Liang, 1994.

Diagnosis. Size small, slender; head distinctly raised above pronotum. Vertex strongly narrow, its width equal to the basal segment of antenna, still narrower towards front; frontal ridge arched between antennae. Antennae inserted between or under lower margins of eyes; anterior margin of pronotum straight, hind process long cone-shaped, surpassing the top of hind femur; lateral keels of prozona parallel; humeral angle obtuse. Posterior angles of lateral lobes of pronotum widened, lobe-like, triangular, apex sharp or spine-like, hind margin with two concavities. Tegmina long oval; wings reaching or surpassing the apex of hind femur. First segment of posterior tarsi equal to the third segment.

Key to the species of *Zhengitettix*

1 Posterior angles of lateral lobes of pronotum triangular lobe-like, apices sharp; sterna of abdomen ochrous ····· **2**

– Posterior angles of lateral lobes of pronotum long spine-like; sterna of abdomen black ····· **3**

2 Width of frontal ridge sulcus wider than the width of basal segment of antenna; antennae inserted under the lower margin of eyes; hind process reaching the middle of hind tibia; hind wing reaching the top of hind process; hind tibia ochrous. Distributed in Hainan ····· *Zhengitettix hainanensis* Liang, 1994

– Width of frontal ridge sulcus as wide as the width of basal segment of antenna; antennae inserted between the lower margin of eyes; hind process reaching one third of hind tibia; hind wing reaching over the top of hind process; hind tibia black. Distributed in Yunnan ····· *Z. triangularis* sp. nov.

3 Posterior angles spines of lateral lobes of pronotum transverse ····· **4**

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Posterior angles spines of lateral lobes of pronotum curved forward or obligue backward ····· **5**

4 Antennae inserted between the lower margin of eyes; paired ocelli placed between the middle of the eyes; hind tibia ochrous, middle and end part black. Distributed in Guangxi ····· *Z. transpicula* Zheng *et* Jiang, 2002

Antennae inserted under the lower margin of eyes; paired ocelli placed below the middle of the eyes; hind tibia brown. Distributed in Guizhou ····· *Z. nigrofemurus* Deng *et al.*, 2010

5 Posterior angles spines of lateral lobes of pronotum curved forward; hind tibia ochrous, basal part light. Distributed in Guangxi ····· *Z. curvispinus* Liang *et al.*, 2007

– Posterior angles spines of lateral lobes of pronotum obligue backward; hind tibia ochrous. Distributed in Guangxi ····· *Z. obliquspicula* Zheng *et* Jiang, 2005

1. *Zhengitettix hainanensis* Liang, 1994

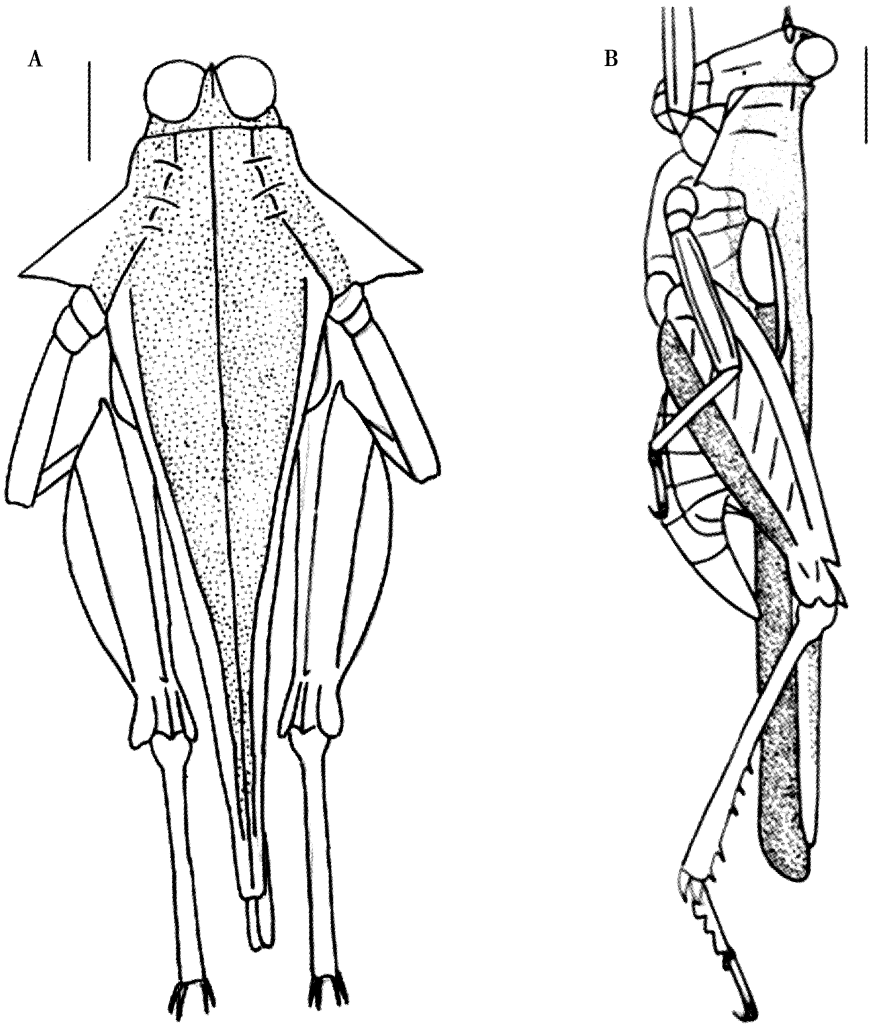
Zhengitettix hainanensis Liang, 1994, *Entomological Research*, 1: 33; Liang and Zheng, 1998, Fauna Sinica, Insecta. Vol. 12, Orthoptera, Tetrigoidea, 76.

Specimens examined: CHINA: Jianfengling, Hainan, 1 ♀ 1 ♂, 25. Ⅶ. 2007, collected by LIANG Ge-Qiu.

Distribution: China (Hainan).

2. *Zhengitettix triangularis* sp. nov. (Fig. 1)

Diagnosis: *Zhengitettix triangularis* is allied to *Zhengitettix hainanensis* Liang, 1994, but differs in: width of frontal ridge sulcus between antennae as wide as the width of basal segment of antenna; antennae inserted between the lower margin of eyes; hind process reaching one third of top part of hind tibia; hind wing reaching extending over the top of hind femur; hind tibia black.



Figs. 1 *Zhengitettix triangularis* sp. nov.

A: Body of male, dorsal view; B: Body of male, lateral view. Scale bar = 1 mm.

Description: Male. Size small, slender. Head distinctly raised above pronotum. Vertex protruding, narrow, the width of top narrower than the basal segment of antenna, midkeel distinctly, protruding before anterior margin, vertex and frontal ridge forming rounded in profile, visible before eyes, slightly protruding forward between antennae, width of frontal ridge between antennae equal to the width of basal segment of antenna. Antennae filiform, inserted between lower margins of eyes, 15-segmented, length of a segment in middle about 5 times longer than its width. Eyes globose, strongly exserted, its lower margin nearly in contact with upper margin of pronotum; lateral ocellus placed in slightly below the middle of anterior margin of eye. Anterior margin of pronotum straight, midkeel of pronotum complete, in profile, upper margin of pronotum straight; lateral keels of prozona parallel; humeral angle obtuse; hind process long cone-shaped, reaching one third of top part of hind tibia; lateral lobes of pronotum produced outwards, posterior triangular angles lobe-like, apices sharp; posterior margin with two concavities. Tegmina long oval, apex round; wings developed, surpassing the top of hind femur. Fore and middle femora long and slender, upper and lower margin straight, width of middle femur equal to the width of visible part of tegmina. Hind femur stout, antegenicular denticles sharp and genicular denticles right angular; outer side of hind tibia with 6 spines, distance of second and third spines wider, inner side with 4 spines. Length of first segment of posterior tarsi nearly equal to the third, third pulvillus of first segment of posterior tarsus larger, first and second pulvilli smaller, apices of all pulvilli obtuse. Subgenital plate long cone-shaped.

Body yellow brown. Disc of head and pronotum dark brown. Frons, cheek and lower parts of lateral lobes of pronotoum yellow brown. Eyes dark brown. Tegmina brown, wings black. Lower outside of hind femur black. Hind tibia black.

Female. Unknown.

Measurements: Length of body: ♂7.5 – 8 mm; length of pronotum: ♂8 – 8.2 mm; length of hind femur: ♂5 – 5.5 mm.

Type materials: Holotype: ♂, CHINA: Mengla (Xinshan), Yunnan, 21°50′N, 101°34′E, 1 000 m alt, 1. Ⅸ. 2009, collected by OU Xiao-Hong. Paratype: 1 ♂, same data as for holotype. Holotype specimen is deposited in the Institute of Zoology, Shaanxi Normal University, and paratype specimens in the Key Laboratory of Forest Disaster Warring and Control in Yunnan Province, Southwest Forestry University.

Etymology: The specific name is derived from the Latin word "*triangularis*".

Distribution: China (Yunnan).

3. *Zhengitettix transpicula* Zheng *et* Jiang, 2002

Zhengitettix transpicula Zheng *et* Jiang, 2002, *Zoological Research*, 23 (5): 410 – 411; Zheng, 2005, Fauna of Tetrigoidea from Western China, 49 – 50; Deng, Zheng and Wei, 2007, Fauna of Tetrigoidea from Yunnan and Guangxi, 43 – 44.

Specimens examined: CHINA: Fangcheng, Guangxi, 1 ♀, 02. Ⅶ. 2001, collected by JIANG Guo-Fang.

Distribution: China (Guangxi).

4. *Zhengitettix nigrofemurus* Deng *et al.*, 2010

Zhengitettix nigrofemurus Deng *et al.*, 2010, *Acta Zootaxonomica Sinica*, 35(1): 46 – 48

Specimens examined: CHINA: Sandu, Guizhou, 1 ♂, 23. Ⅶ. 2008, collected by DENG Wei-An.

Distribution: China (Guizhou).

5. *Zhengitettix curvispinus* Liang *et al.*, 2007

Zhengtettix curvispinus Liang *et al.*, 2007, *Acta Zootaxonomica Sinica*, 32(3): 659 – 660.

Specimens examined: CHINA: Tian'e, Guangxi, 3 ♀, 14. Ⅺ. 2002, collected by ZHENG Zhe-Min.

Distribution: China (Guangxi).

6. *Zhengitettix obliquspicula* Zheng *et* Jiang, 2005

Zhengitettix obliquspicula Zheng *et* Jiang, 2005, Fauna of Tetrigoidea from Western China, 50 – 51; Deng, Zheng and Wei, 2007, Fauna of Tetrigoidea from Yunnan and Guangxi, 44 – 45.

Specimens examined: CHINA: Tianlin, Guangxi, 2 ♀, 01. Ⅵ. 2002, collected by LIU Jian-Wen.

Distribution: China (Guangxi).

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郑蚱属的分类研究及一新种记述（直翅目：蚱总科）

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摘要：本文记述中国郑蚱属 *Zhengitettix* 昆虫 6 种，包括采自云南的 1 新种，即三角郑蚱 *Zhengitettix triangularis* sp. nov. 此新种近似于海南郑蚱 *Z. hainanensis* Liang，1994，但主要区别为：颜面隆起纵沟的宽度等于触角基节的宽度；触角着生于复眼下缘之间；后突到达后足胫节顶端 1/3 处；后翅超过后突顶端；后足胫节黑色。并附有郑蚱属分种检索表和地区分布。模式标本分别保存于陕西师范大学动物研究所昆虫标本室及西南林业大学云南森林灾害预警与控制重点实验室。

关键词：直翅目；蚱总科；郑蚱属；新种
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